SVKM's
D. J. Sanghvi College of Engineering

Program: B.Tech in Information Technology **Academic Year: 2022** **Duration: 3 hours**
Date: 06.01.2023
Time: 10:30 am to 01:30 pm
Subject: Blockchain Technology (Semester VII) **Marks: 75**

Question No.		Max. Marks
Q1 (a)	Describe the architecture of a Blockchain. **OR** i. Compare and contrast Centralized and Decentralized Networks. ii. Summarize the Blockchain characteristics and advantages	[05] [03] [02]
Q1 (b)	i. Justify or Contradict: A 51% attack will damage the blockchain's integrity. ii. Distinguish between public and private blockchain.	[05] [05]
Q2 (a)	Explain smart contract and their working. Discuss in short how crowdfunding platforms can be managed using smart contracts. **OR** Draw and express hyper ledger reference architecture. Clarify how hyper ledger fabric can be implemented in supply chain management.	[08] [08]
Q2 (b)	Consider a following scenario: University has approved funds to be transferred to Engineering and Diploma colleges for R&D cell. How will the university track the utilization of funds using blockchain.	[07]
Q3 (a)	Discuss the properties of distributed consensus protocol and compare Proof-of-work and Proof-of-stake. **OR** Elaborate on design principles of blockchain economy.	[10] [10]
Q3 (b)	Discuss Byzantine General problem in blockchain and solution using bitcoin.	[05]
Q4 (a)	Discuss the Blockchain application "DAO" in detail. **OR** Analyze and Discuss a use case "Block chain and Auctions".	[07] [07]
Q4 (b)	Write a solidity program consisting of structure EmpAttendance (Employeename, ID,date, Attendance) and functions to set and get values, mark Attendance and count of employees present on a particular date.	[08]
Q5 (a)	**Solve any two.** i. Identify and discuss scalability and cost issues in Ethereum.. ii. Compare and contrast between Ethereum v/s Hyperledger framework iii. Describe the flow of Transactions in hyper ledger fabric. iv. Identify and discuss the type of accounts and their properties in Ethereum.	 [05] [05] [05] [05]
Q5 (b)	Justify or Contradict: Digital currencies supported by blockchain do not need a centralized authority.	[05]